

## SURFACE TREATMENT METHOD AND EQUIPMENT

### ABSTRACT OF THE DISCLOSURE

5 A method for treating material surface utilizing atomic hydrogen. The method includes utilizing atomic hydrogen by mixing halogen and/or halide to a gas which is used for generating, atomic hydrogen in the plasma. The present method also includes utilizing a characteristics of plasma downstream (11) in which the objective surface is prevented from physical damage caused by high energy particle and undesirable reactive species are controlled so as to avoid their influence. In an alternative embodiment, the present invention includes a method for a material surface treatment utilizing atomic hydrogen without the influence of atomic oxygen by using a gas, as a plasma source, containing the molecule and/or compound of chlorine, bromine and/or iodine and not containing molecules with oxygen atom.

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